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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,522	08/05/2003	Ninev Karl Zia	210_195CON	6889
7590 05/26/2004			EXAMINER	
Dana F. Bigelow Wall Marjama & Bilinski LLP 101 South Salina Street, 4th Floor Syracuse, NY 13202			COCKS, JOSIAH C	
			ART UNIT	PAPER NUMBER
			3749	

DATE MAILED: 05/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/634,522

Applicant(s)

ZIA ET AL.

Examiner

Josiah Cocks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/5/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Preliminary Amendment

1. The preliminary amendment filed 8/5/2003 has been entered.

Drawings

2. The drawings filed with the application on 8/5/2003 are accepted by the examiner.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 42 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 42, the recitation "wherein the flame retainer is about one third of its outside diameter" is unclear. What aspect of the flame retainer is one third of its outside diameter? Its inside diameter? For the purpose of an examination on the merits this claim has been regarded as reciting that the inner diameter is one third of the outer diameter. Correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 29-32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Csadenyi* (US # 4,846,143) in view of *Schlinder et al.* (US # 6,347,935) and *McManus* (US # 3,653,371).

Csadenyi discloses in Figures 1-4 an inshot gas burner for use in a furnace similar to that described in applicant's claims 29-32 and 35 including a venturi tube (100) having a converging inlet section and diverging outlet section (see Fig. 2) and a cylindrical flame retainer housing (114) at the exit of the outlet section. The divergence of the outlet section as measured in Figure 2 was found to be between 4 and 5°. The mouth portion (102) is regarded as the holder of nozzle/spud (116). *Csadenyi* also discloses that the heat output of his burner is intended to be within the range of 60,000 BTU/hr. and below (see col. 3, lines 4-5) and the burner is of desirably small physical dimensions, proposing, by way of example, a venturi tube length (which

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is the overall length of the flame retainer housing, the spud holder and venturi tube length recited by applicant) of approximately six (6) inches with a venturi tube outlet of approximately one (1) inch (see col. 7, lines 41-53) (i.e. approximately .98 inches). *Csadenyi* further discloses that the velocity of the air-gas mixture affects the BTU output (see col. 7, lines 19-24). For the proposed dimensions this results in a heat output range of 40,000 BTU/hr. to 10,000 BTU/hr., which for a six (6) inch overall length is approximately 6666 BTU/in./hr. to 1666 BTU/in./hr. within applicants 5000-5800 BTU/in./hr. range.

Csadenyi does not explicitly disclose some of the dimensions and outputs of the burner disclosed in applicant's claims e.g. an overall length of less than 5.00 inches and more specifically less than 4.0 inches or a combined length of the venturi tube housing and flame retainer being 2.9 to 3.0 inches, a throat diameter of .650 to .70 inches, and more specifically .682 inches, 9,900 Btus per inch of diffuser length, and an exit diameter 1.44 times the throat.

However, the examiner considers that a person of ordinary skill in the art would recognize that each the values recited by applicant not explicitly disclosed by *Csadenyi* are variables recognized to be obtainable through routine experimentation. *Schlinder et al.* and *McManus* are cited as being burners in the same field of endeavor as *Csadenyi* wherein *Schlinder et al.* teaches that it is recognized that venturi shape affects air-flow rate characteristics and that the venturi may preferably have a ratio of throat diameter to outlet diameter of 1:1.2 to 1:1.6 (covering applicant's 1.44 ratio). For a one (1) inch outlet diameter as proposed in *Csadenyi* this would result in a throat diameter of .833 inches to .625 inches, which covers the ranges cited by applicant. *McManus* teaches that tube length desirably affects both mixing characteristics and angle of divergence and notes that a one to six ratio of throat diameter to diffuser tube length is

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larger than typical ratios. In view of the teaching of the prior art, the examiner considers that selection of such variables as the sizes of burner components, and heat outputs would be readily discoverable to persons of ordinary skill in the art by routine experimentation based on desired or optimal burner characteristics. (See MPEP § 2144.05(II)(A)). Accordingly, applicant's recitation of optimal values for these variables are not regarded as patentably distinct.

8. Claims 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Csadenyi* in view of *Schlinder et al.* and *McManus* as applied to claim 29 above, and further in view of *Ahmady et al.* (US # 5,628,303).

Claims 33 and 34 recite a specific ratio for the entrance diameter of the converging section of the venturi tube to the throat (2.11) and a distance from the venturi tube inlet to the throat is 25% of the total combined length of the venturi tube and flame retainer housing.

Again, the examiner considers that a person of ordinary skill in the art would recognize that each the values recited by applicant not explicitly disclosed by *Csadenyi* are variables recognized to be obtainable through routine experimentation. *Ahmady et al.* is cited to show a burner in the same field of endeavor as *Csadenyi* wherein the burner of *Ahmady et al.* that the ratio of throat diameter to inlet diameter of a venturi tube is desirably in the range of 0.3 to 0.4, with the converse ration being 3.33 to 2.5. The examiner considers that the 2.5 ratio of inlet diameter to throat diameter is the **about 2.11** recited by applicant. A person of ordinary skill in the art would modify *Csadenyi* to incorporate the ratio of *Ahmady et al.* as this produces a desired flame length without producing an unacceptable amount of noise (see col. 3, lines 21-28). However, even if not 2.5 cannot be considered the recited about 2.11 a person of ordinary

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skill in the art would recognize that this ratio as well as the distance from the venturi tube inlet to the throat may be optimized through routine experimentation and is not patentably distinct. (See MPEP § 2144.05(II)(A)).

9. Claims 36-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Csadenyi* in view of *Schlinder et al.* and *McManus* as applied to claim 29 above, and further in view of *Gruswitz et al.* (US # 5,108,284).

Csadenyi in view of *Schlinder et al.* and *McManus* are regarded to disclose or teach all the limitations of claims 36-55 except possibly for the flame retainer shapes and dimensions and the top and bottom plates with spaced apart stampings and a crossover channel formed in one of the plates for ignition when multiple burners are combined.

Gruswitz et al. teaches a burner in the same field of endeavor as *Csadenyi* wherein the burner of *Gruswitz et al.* shows an inshot gas burner made of top and bottom plates with spaced apart stampings (see Fig. 3 and 4 and col. 3, lines 26-54) and crossover channels (58a and 58b) that carry over flame for ignition when used with multiple burners (see col. 1, lines 32-37).

Gruswitz et al. also discloses that flame retention devices may have multiple shapes and dimensions (see Figs. 9 and 10) and that the parameters of the flame retention device are selected for optimal results based on the type of furnace in which they are used (see col. 6, lines 32-49).

Therefore, applicant's recited flame retention device shapes and dimensions would be obtainable through routine experimentation and are not regarded as patentably distinct. (See MPEP § 2144.05(II)(A)).

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Therefore, in regard to claims 36-55 it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the burner of *Csadenyi* to incorporate the stamping structure and flame retention device structure taught by *Gruswitz et al.* for the desirable purpose of providing a burner with optimum combustion flame characteristics in alleviating conditions of: poor ignition, flame life off and blow off, poor flame carry--over, flame flash back, poor combustion, and heightened noise levels (see *Gruswitz et al.*, col. 2, lines 53-60).

Conclusion

10. This action is made non-final. A THREE month shortened statutory period for reply has been set. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) months from the mailing date of this communication.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Koehrer, Best, Riehl, Legutko et al.*, and *Poe et al.* are included to further show the state of the art concerning inshot burner construction.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (703) 305-0450. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus, can be reached at (703) 308-1935. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc
May 19, 2004


JOSIAH COCKS
PATENT EXAMINER
ART UNIT 3749